

A1
Concl.
software is an integrated set of automation software that views, stores, controls, analyzes and manages the information from the wafer transfer system. The software generates the display screens and shows process information in real-time. The software is preferably operationally compatible with personal computer operating systems such as a MAC OS®, Linux®, Microsoft Windows® or like operating environments.

A2
[0042] As described above, the tool bar 103 comprises iconic pushbuttons used to perform auxiliary wafer transport system 33 functions. The buttons are setup 133, options 135, routines 137, security 139, exit 141, command 143, diagnosis 145 and help 147. The setup button 133 accesses interface parameters. The options button 135 accesses the variables to adjust the antechamber purge times. The routines 137 button provides the ability to perform basic reset and homing functions for the wafer transport robot with all wafer location coordinates. The security button 139 is used to change login status. The exit button 141 is used to exit the wafer transfer software. The command button 143 provides access to the interfaces with the wafer transport robot 39. The command function 143 is used to initialize the wafer transfer robot 39 motions. The diagnosis button 145 provides explanation in the event the access wafer transfer system 33 faults. The help button 147 provides color coding legends for the graphics and general information on the process.

A3
[0045] The graphical representations provide the user interface with the wafer transfer system 33. The user places the pointing device 57 over a graphic representing a physical counterpart and selects the graphic or function by clicking or clicking and holding a button on the pointing device (if the pointing device is a mouse or pressing with a finger if a touch display) such as opening or closing a door or selecting a wafer(s) for transfer. Releasing the pointing device button releases a graphical selection. Door position can be indicated

by a color change or a modulating color when in travel (as shown in FIG. 5).

[0046] The active wafer group bar graphic 153₁, 153₂ indicates which group of wafers (e.g., five wafers) will be transferred. If a wafer cassette 49 has a capacity of twenty-five wafers, wafer groups are preprogrammed to be selected in groups corresponding to the number of wafer pockets on the carrier 27. The active wafer slot 155₁, 155₂ graphic indicates the individual wafer slot selected by the user. This graphic indicates which individual wafer 25 will be transferred. In this embodiment, the cassette slot graphic indicates 25 individual positions to provide the status on the wafers stored in a respective slot.

A4 [0050] If wafer cassettes 49 have not been loaded, the user verifies that the inner door 59₁, 59₂ of a desired antechamber 45₁, 45₂ is closed (step 207), and opens its respective outer door 61₁, 61₂ (step 209) from the display 53 using the pointing device 57 and inner 149₁, 149₂ and outer 151₁, 151₂ door graphics. A wafer cassette 49 with a desired number of wafers 25 is manually loaded (step 211) into the antechamber 45₁, 45₂ by the user and the outer door 61₁, 61₂ is closed (step 213) from the user interface 101. After the outer door 61₁, 61₂ is closed, the antechamber 45₁, 45₂ is automatically purged (step 215).

A5 [0056] To transfer a single processed wafer or a group of processed wafers from the carrier 27, the user selects a desired processed wafer 25 graphic (step 257) or selects all of the processed wafers by selecting the carrier (step 259). If one wafer 25 is selected, the user drags the selection into a predetermined cassette wafer slot and releases the selection (step 261). If a group of processed wafers are selected, the group is dragged from the carrier graphic 115 to the predetermined cassette wafer slots and released (step 263). After the processed wafers have been graphically transferred, a request to transfer is issued by the wafer transfer software.